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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/337,916	06/22/1999	ARI J. HOURUNRANTA	442-008702-U	9673

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EXAMINER

HOANG, THAI D

ART UNIT	PAPER NUMBER
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2667

DATE MAILED: 12/22/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/337,916

Applicant(s)

HOURUNRANTA ET AL.

Examiner

Thai D Hoang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-67 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 14-15, 17-19, 21-22, 26-29, 31-33, 39-51, 53-55 and 61-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, U.S. patent No. 6,310,897 in view of Anderson et al, U.S. Patent No. 6,026,506 hereafter referred to as Watanabe and Anderson respectively.

Regarding claims 14, 42 and 64, Watanabe discloses a method and system for encoding multiplexer/decoding demultiplexer information. Watanabe discloses that the system comprises a demultiplexer 121 performs demultiplexing a multiplexed signal, which is multiplexed by a Multiplexer 108; see figures 1-2, 7-8 and 16. The multiplex signal comprising one or more data units, including a video data unit, and a framing data block, the framing data block carrying information on the configuration of the data units in said multiplex signal; see data frames in figures 4-6, 14, 25-26, 38. Watanabe teaches that the system comprises the steps of:

providing an information transmission comprising causing a reception side to perform an error check with respect to the header information or part of the header information, and decoding the encoded information by using the reconstruction

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information; header in figures 4-6, 14, 25-26, 38; col. 2, lines 55-63 (searching for said framing data block from a received multiplex signal);

demultiplexing transmitted bit stream into picture information, speech information, character information, and the like by a demultiplexer 121; fig. 1-2, 7-8 and 16; col. 8, lines 28-30 (demultiplexing said one or more data units according to the information in said framing data block);

generating one or more demultiplexed signals, including a demultiplexed video data signal, from said demultiplexed data units; figures 2, 8 and 16;

forwarding said demultiplexed video data signal to a video decoder for decoding; fig. 2, 16, 18 element 124; fig. 8, element 323;

checking error of the demultiplexed data; fig. 2, element 125; fig. 11, element 402 (detecting at demultiplexing a possible invalidity of a demultiplexed video data unit);

Watanabe does not disclose that the method comprises the step of forwarding an error type indication to the video decoder with the demultiplexed video data signal as a response to detecting an invalidity in a demultiplexed video data unit. However Anderson discloses a method of concealing errors in transport stream data. Anderson discloses that the method provides a quick response to transport stream delivery errors is accomplished by detecting the type of error and thereafter signaling the error type directly to the decoders so that appropriate error concealment can be invoked.

According to the reference an error signal is sent to the decoder to allow the decoder to mark the exact point in the stream where the error occurred col. 6, lines 21-36; col. 12, line 64 – col. 13, line 13. It would have been obvious to one of ordinary skill in the art at

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the time the invention was made to adapt the method of detecting type of error disclosed by Anderson into the Watanabe's system in order to improve the process of data signal because the system quickly responds correspond to a type of error detected.

Regarding claims 15, 18-19, 21-22, 43, 45-48 and 66, Watanabe does not explicitly disclose that forwarding error location information relating to the demultiplexed video data signal to the video decoder, the error location information indicating the location of erroneous bits in the demultiplexed video data signal. However, Anderson discloses that the method provides a quick response to transport stream delivery errors is accomplished by detecting the type of error and thereafter signaling the error type directly to the decoders; col. 6, lines 21-36; col. 12, line 64 – col. 13, line 13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the method of detecting type of error disclosed by Anderson into the Watanabe's system for the same purpose as recited in claim 14.

Regarding claims 17 and 44, Watanabe discloses that a 2-bit pattern is assigned as "SPT" in advance. In this case, there are three prediction types, namely I (intraframe encoding), P (forward predictive encoding, and B (bidirectionally predictive encoding), to which bit patterns of 00, 01, and 10 are respectively assigned. Since information corresponding to "11" is not used, this code is used as designation information. That is, if "SPT" is "11", it does not indicate any prediction type but indicates that important information follows, such as net work error; col. 13, lines 14-39 (if it is not possible to

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determine the location of erroneous bits in the demultiplexed video data signal, a general error indication is forwarded to the video decoder.)

Regarding claims 26-28, 31, 49-51 and 53, Watanabe does not disclose that the method comprises the steps of checking for missing video data unit. However, Anderson discloses that The Packet Identification (PID) field data provides packet identification, demultiplexing, and sequence integrity data. The PID field is used to collect the packets of a stream and reconstruct the stream. The continuity counters and error indicators provide packet sequence integrity and error detection; col. 4, lines 28-34. Furthermore, Anderson discloses that the 4-bit Continuity Counter field is maintained for each enabled PID index to detect any missing data in the payload stream; fig. 2, col. 9, lines 22-25; col. 11, lines 8-13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the detecting error method disclosed by Anderson into Watanabe's system for the same purpose as recited in claim 14.

Regarding claims 29, Watanabe discloses that the system can detect the error of the packet by checking the validity of the sequence number of the AL-PDU; fig. 37-49; col. 30, line 41- col. 33, line 63 (demultiplexed video data unit is an AL-PDU.)

Regarding claims 32-33 and 54-55, Watanabe discloses that the system uses Cyclic Redundancy Check (CRC) to detect illegal bits in the data unit. Watanabe does not teach that an error type indicator is forwarded to a decoder. However, Anderson teaches that the method uses table section CRC32 to detect errors; col. 6, lines 19-21; col. 13, lines 8-11, col. 16, lines 3-5. Anderson discloses that the transport demultiplexor

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of the invention checks the CRC value of table sections against the value coded in the stream. Those sections that do not pass the CRC check are discarded, and the application optionally notified; col.11, lines 47-49. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the detecting error method disclosed by Anderson into Watanabe's system for the same purpose as recited in claim 14.

Regarding claims 39-41 and 61-63, the method disclosed by Watanabe comprises the step of detecting a shifted location of the starting point of a demultiplexed video signal; col. 8, lines 32-33; col. 29, lines 46-59. Watanabe does not explicitly teach that the method comprises the step of forwarding an error type indicator to a decoder. However, Anderson teaches that errors in the incoming transport stream are identified, and forwarded to a decoder; col. 6, lines 21-36; col. 12, line 64 – col. 13, line 13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the detecting error method disclosed by Anderson into Watanabe's system for the same purpose as recited in claim 14.

Regarding claims 65 and 67, Watanabe does not disclose that the video decoder of the multimedia terminal is adapted to use the error type information to conceal errors in the demultiplexed video data signal. However, Anderson teaches this feature; abstract, col. 6, lines 16-26. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the detecting error method disclosed by Anderson into Watanabe's system for the same purpose as recited in claim 14.

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2. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, U.S patent No. 6,310,897 in view of Anderson et al, U.S. Patent No. 6,026,506, and further in view of Park et al, US patent No. 6,034,968, hereafter referred to as Watanabe, Anderson and Park respectively.

Regarding claims 24-25, Watanabe and Anderson do not disclose that the framing data blocks comprise an HDLG flag and PN flag. However, Park discloses an adaptive multiplexing/demultiplexing method. Park discloses that the data frame comprises an HDLG flag and PN flag; see fig. 3; col. 2, lines 1-16 and 30-39. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply HDLC flag and/or PN flag to the system for the same purpose as recited in claim 14.

3. Claims 30 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, U.S patent No. 6,310,897 in view of Anderson et al, U.S. Patent No. 6,026,506, and further in view of Yamanaka et al, US patent No. 5,878,041, hereafter referred to as Watanabe, Anderson and Yamanaka respectively.

Regarding claim 30 and 52, Watanabe does not teach that the system detects a missing data unit. Anderson teaches that the system detects a data unit missing by checking sequence number; col. 6, lines 22-25; col. 9, lines 22-25, 60-62. Both Watanabe and Anderson do not disclose that an empty data unit is added to the data stream if missing a data unit. However, Yamanaka teaches this feature; see abstract, fig. 3, col. 2, lines 37-57. It would have been obvious to one of ordinary skill in the art at

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the time the invention was made to apply a null cell disclosed by Yamanaka to the Watanabe's system for the same purpose as recited in claim 14.

4. Claims 16, 20, 23, 34-38 and 56-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, U.S patent No. 6,310,897 in view of Anderson et al, U.S. Patent No. 6,026,506, and further in view of Anderson et al, U.S. Patent No. 6,072,771, hereafter referred to as '897, '506 and '771 respectively.

Regarding claims 16, 20 and 23, '897 and '506 do not disclose that the error location information comprises a table of error locations. However, '771 discloses that the system comprises a table of error location; col. 6, lines 8-14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the table of error disclosed by Anderson into Watanabe's system for the same purpose as recited in claim 14.

Regarding claims 34-38 and 56-60, '897 teaches that the method comprise the steps of checking header portion of the data unit – col. 12, lines 58-60; col. 21, lines 11-27; col. 22, lines 12-15; col. 36, lines 3-7 – and checking the length of the data unit in order to detect errors in the data unit – col. 33, lines 4-12. '897 does not explicitly teach that the method comprises the step of forwarding an error type indicator to a decoder. However, '771 teaches that the MPEG-2 table section syntax provides a section length field to specify the length of the table section. According to Anderson, an error exists when the table section ends before the start of the next table section as indicated by the pointer field; col. 13, lines 30-40. It would have been obvious to one of ordinary skill in

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the art at the time the invention was made to adapt the detecting error method disclosed by Anderson into Watanabe's system for the same purpose as recited in claim 14.

Response to Arguments

Applicant's arguments with respect to claim 14-67 have been considered but are moot in view of the new ground(s) of rejection.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai D Hoang whose telephone number is (703) 305-3232. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Thai Hoang


CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 12/12/03